REMARKS

I. Status of Claims

With entry of this amendment, claims 1-20 are pending. Claim 21 was previously canceled. Claim 1 is amended to further clarify the subject matter claimed therein. Support for the amendment can be found throughout the as-filed specification and original claims as filed including, for example, ¶¶ [0011] and [0025] of the Specification. Accordingly, no new matter is introduced with these amendments.

In the Final Office Action mailed May 25, 2011, the following actions were taken:

- Claims 1-3, 8 and 9 were rejected under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 5,578,388 to Faita et al. (hereinafter "Faita");
- Claims 4-7 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Faita in view of U.S. Patent No. 6,627,035 to Fan et al. (hereinafter "Fan"); and
- Claims 10-20 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Faita in view of U.S. Patent Publication No. 2003/0232231 to Stute et al. (hereinafter "Stute") and International Publication No. WO 00/63992 to Brambilla et al. (hereinafter "Brambilla").

II. Examiner Interview Summary

Applicants thank Examiner Echelmeyer for the courtesies extended to Applicants' representative, Marc Evans, during the telephonic Examiner Interview conducted on September 27, 2011. Applicants are in agreement with the statements regarding the

substance of the interview as presented in the Interview Summary mailed October 7, 2011.

Particularly, Applicants indicated during the interview that the subject matter of claim 1 explicitly required counter-current flow of air, from the bottom to the top of the cathode chamber, relative to the flow of hydrogen-fuel, from the top to the bottom of the anode chamber. The Examiner remained concerned that the claim, as written, with recitations of "means for" followed by functional language, may not be claiming the counter-current flow. The Examiner suggested that Applicants respond to the Office Action presenting arguments why the counter-current flow is claimed in claim 1 given the means-for language. The Examiner then stated that, should she find that the structure is claimed in claim 1, the Faita reference likely does not anticipate the claims.

Further to this interview, Applicants addressed the concerns expressed by the Examiner via the amendment to claim 1 set forth above. Claim 1 now further clarifies the structure of the recited membrane fuel cell, and removes the "means for" language pointed to by the Examiner. These amendments find full support in the as-filed application.

III. Response to Rejections

A. Rejection under 35 U.S.C. § 102(b)

The Examiner rejects claims 1-3, 8 and 9 under 35 U.S.C. § 102(b) as being anticipated by Faita for reasons discussed at pages 2-3 of the Final Office Action. Applicants respectfully traverse this rejection for at least the reasons that follow.

To establish a rejection under 35 U.S.C § 102(b), the Examiner must demonstrate that the reference teaches each and every claim element. *See* M.P.E.P

§ 2131. "The identical invention must be shown in as complete detail as is contained in the . . . claim." *Richardson v. Suzuki Motor Co.*, 868 F.2d 1226, 1236 (Fed. Cir. 1989). In the present case, Faita fails to anticipate claims 1-3, 8 and 9, at least because the reference fails to direct those skilled in the art to the subject matter recited in the claims without any need for picking, choosing, and combining various disclosures. *In re Arkley*, 455 F.2d 586, 587 (C.C.P.A. 1972).

The Examiner states that Faita teaches "a membrane fuel cell delimited by bipolar plates and having anodic and cathodic compartments (abstract, column 1 lines 10-12)" and "[t]he compartments have means for feeding air and fuel (Figure 3)." Final Office Action at page 3. Faita, however, fails to teach or suggest the limitations

> said cathodic compartment comprising a dry air inlet disposed about the bottom of the cathodic compartment through which dry air enters the cathodic compartment, and an exhaust air outlet disposed about the top of the cathodic compartment through which exhaust air is discharged from the cathodic compartment, [and]
>
> said anodic compartment comprising a hydrogen-containing fuel inlet disposed about the top of the anodic compartment through which a hydrogen-containing fuel enters the anodic compartment, and an anodic exhaust outlet disposed about the bottom of the anodic compartment through which anodic exhaust is discharged from the anodic compartment

recited in claim 1. These limitations recite the structure for the counter-current flow of air to fuel. Such a counter-current flow is not disclosed in Faita.

The Examiner next asserts that "Faita teach[es] means for feeding the react gases through channels (9) (Figure 2). The flow, from 'bottom to top' or 'top to bottom' depends on the orientation of the stack." *Id.* at 6. The Examiner then asserts that "it is noted that the features upon which applicant relies (i.e., the counter-current flow of

reactants) are not recited in the rejected claim(s)[,]" and that "[i]t appears that Applicant is arguing that [Faita] does not teach the relative flow of the reactants such as illustrated in instantly filed Figure 1; however, the Examiner finds that this structure is not claimed in claim 1." *Id.* at page 6-7. Applicants respectfully disagree with the Examiner.

Because the claims now explicitly recite the structure that defines the counter-current flow of air to fuel, a counter-current flow is explicitly claimed even though the words "counter-current flow" are not explicitly recited. As admitted by the Examiner during the Examiner Interview, Faita does not teach this feature. Rather, Faita teaches that reactant inlet and product removal is uniformly achieved through holes 9 and channels 11 of gasket 8 in Figure 3. Faita at col. 6, ll. 25-33. The gasket is symmetrical meaning that the hole 9 at the top left of the gasket is indistinguishable from the hole 9 at the bottom right of the gasket. *See id.*, Figure 3. Moreover, Faita does not disclose *which* hole 9 is for feeding and *which* is for removal. Therefore, Faita does not disclose, explicitly or inherently, the opposing flows now recited in the claims.

For at least these reasons, the anticipation rejection under 35 U.S.C § 102(b) is improper and Applicants respectfully request that it be withdrawn.

B. Rejections under 35 U.S.C. § 103(a)

1. Claims 4-7

The Examiner rejects claims 4-7 under 35 U.S.C. § 103(a) as being obvious over Faita in view of Fan for reasons discussed at pages 3 and 4 of the Final Office Action, and claims 10-20 over Faita in view of Stute and Brambilla for reasons discussed at pages 4-6 of the Final Office Action. Applicants respectfully traverse these rejections.

As discussed above, Faita does not teach all of the elements of the claims, specifically the structure recited in claim 1, which results in the counter-current flow of air to fuel. Nothing in the disclosures of Fan, Stute or Brambilla cures the deficiencies of Faita. For example, Fan teaches a process of making a gas diffusion electrode, and Stute teaches a process of supplying air to the fuel cell. Neither describe, however, the recited components of the claimed fuel cell. In addition, Brambilla teaches the flow circulation occurs on the depressed portions of the bipolar plate (Fig. 2B, Item 11 and Page 9, Lines 18-21) and does not teach or suggest the claimed flow directions. These rejections are thus improper and Applicants respectfully request that they be withdrawn.

IV. Conclusion

In view of the foregoing amendments and remarks, Applicants respectfully request reconsideration of this application and the timely allowance of the pending claims.

Please grant any extensions of time required to enter this response and charge any additional required fees to Deposit Account No. 06-0916.

Respectfully submitted,

FINNEGAN, HENDERSON, FARABOW,
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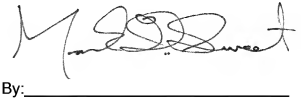

Dated: October 25, 2011

By:_____
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